DETAILED ACTION

Notice to Applicant

1. The following is an Examiner's Amendment and Reason's for Allowance following Applicant's Response to Restriction Requirement on 6/25/09 and communications with Applicant Representative Atty. Shawn Li, Reg. No. 58,132, dated 8/14/09 (*see* attached Interview Summary).

2. Of claims 34–39, and 52–86 pending as of 3/30/09, claims 54, and 58–71 are allowed as amended below.

3. In response to the Election/Restrictions requirement of 2/26/09, Applicant elected invention III, claims 54–71, and 76–86, for examination with traverse. Claims 34–39, and 72–75 were withdrawn at that time.

Allowable Subject Matter

1. Claims 54 and 58–71 as amended below are allowed over the prior art as explained further below in the reasons for allowance.

EXAMINER'S AMENDMENT

2. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Shawn Li, Reg. No. 58,132 on 8/14/09.

The application has been amended as follows:

In the Title

Please amend the title of the application as follows:

(Currently Amended) COMPUTER PROGRAM PRODUCT ~~SYSTEM AND METHOD~~ FOR DETERMINING AND REDUCING CUSTOMER IMPACT

In the Claims

Please amend claims 34–39, 52–86 of the application as follows:

34 – 39. (Canceled)

52 – 53. (Canceled)

54. (Previously Presented) A computer program product comprising a computer readable medium having computer-executable instructions thereon that, when executed by a computer, perform a ~~computer-implemented~~ method for quantitatively determining customer service impact of scheduling changes, the method comprising:

receiving customer line item orders, each having a requested completion date, wherein each customer line item is an individual customer requested product for purchase;

scheduling a scheduled completion date for each item order;

selecting at least one item order, each item order having a scheduled completion date;

comparing the scheduled completion date with the requested completion date for each selected item order, wherein said comparing comprises:

generating a demand array of item orders;

generating a supply array of manufacturing inventory;

selecting an item order in the demand array;

matching manufacturing inventory in the supply array with the selected item order; and

comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array;

displaying a group of customer service measurements comprising days late, value late, and value-days late, wherein

days late is determined by the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate;

value late is a value of a late item order determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and

value-days late is a value-time late determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order;

selecting a customer service measurement from the group of customer service measurements; ~~and~~

deriving a customer service impact ~~measurement~~ for each selected item order based on said comparing and the selected customer service measurement; and~~, wherein the customer service measurement represents values calculated based on one or more formulas selected from the group consisting of:~~

~~the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate;~~

~~a value of a late item order, determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and~~

~~a value-time late, determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order.~~

reporting the customer service impact for each selected item order.

55 – 57. (Canceled)

58. (Previously Presented) The computer program product~~method~~ of claim 54, wherein the value of the item order is determined by multiplying a number of ~~late~~ item orders by a unit price per item order, then subtracting any commission and discount.

59. (Previously Presented) The computer program product~~method~~ of claim 54, further comprising the step of:

determining an overall customer service ~~measurement~~impact based on the customer service ~~measurement~~impact for each item order.

60. (Previously Presented) The computer program product~~method~~ of claim 59, further comprising the step of:

reporting the overall customer service ~~measurement~~impact as the overall customer service ~~measurement~~impact for that scheduling operation.

61. (Previously Presented) The computer program product~~method~~ of claim 59, further comprising:

displaying the customer service ~~measurement~~impact on a calendar showing the total customer service ~~measurement~~impact for a predetermined time period.

62. (Previously Presented) The computer program product~~method~~ of claim 59, further comprising repeating said receiving, scheduling, selecting, comparing, deriving, and determining for different schedules to determine the customer service impact of schedule changes.

63. (Previously Presented) The computer program product~~method~~ of claim 62, further comprising:

selecting one or more customers; and

determining a customer service ~~measurement~~impact for each of the selected customers based on the customer service ~~measurement~~impact for each item order of the selected customer.

64. (Previously Presented) The computer program product~~method~~ of claim 54, further comprising the step of:

determining a customer service ~~measurement~~impact for a first customer and a second customer, based on the customer service ~~measurement~~impact for each item order from each of the first and the second customers.

65. (Previously Presented) The computer program product~~method~~ of claim 64 further comprising the step of:

displaying the customer service ~~measurement~~impact on a calendar showing the total customer service ~~measurement~~impact for a predetermined time period.

66. (Previously Presented) The computer program product~~method~~ of claim 64, further comprising repeating said receiving, scheduling, selecting, comparing and determining for different schedules to determine the customer service impact of schedule changes.

67. (Previously Presented) The computer program product~~method~~ of claim 54, wherein said generating a demand array comprises generating a demand array of unshipped customer line items.

68. (Previously Presented) The computer program product~~method~~ of claim 67, wherein said generating a supply array comprises generating a supply array of at least one of inventory work orders and manufactured inventory.

69. (Previously Presented) The computer program product~~method~~ of claim 67, further comprising the step of:

identifying a subset of work orders having a customer service ~~measurement~~impact greater than a predetermined threshold;

performing at least one of a utilization, contention, and material constraint inquiry on the subset of work orders.

70. (Previously Presented) The computer program product~~method~~ of claim 69, wherein:

the utilization inquiry involves identifying resources having a highest load/capacity ratio during a specified time period;

the contention inquiry involves identifying resources allocated most frequently in scheduling; and

the material limitation inquiry involves identifying material items causing scheduling delay.

71. (Previously Presented) The computer program product~~method~~ of claim 69, further comprising the step of:

identifying as a potential bottleneck a material or resource having the greatest result in the at least one of a utilization, contention, and material constraint inquiry.

72 – 86. (Canceled)

Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

In the art of customer service supply chain analysis, the present invention is a computer program that quantitatively determines customer service impact of scheduling changes, including receiving customer product purchase orders that have requested completion dates; scheduling a completion date for each order; selecting an order and comparing the scheduled completion date with the requested completion date for it; wherein said comparing comprises: generating a demand array of orders; generating a supply array of manufacturing inventory; selecting an order in the demand array; matching manufacturing inventory in the supply array with the selected order; and comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array; displaying a group of customer service measurements comprising days late, value late, and value-days late, wherein days late is determined by the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate; value late is a value of a late item order determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and value-days late is a value-time late determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order; selecting a customer service measurement from the group of customer service measurements;

deriving a customer service impact for each selected order based on said comparing and the selected customer service measurement; and reporting the customer service impact for each selected item order.

The closest prior art is **Powell (U.S. 6,195,590),** which discloses a computer-implemented method for determining customer service impact, comprising: receiving item orders, each having a requested completion date; scheduling a scheduled completion date for each item order; selecting at least one item order, each item order having a scheduled completion date; comparing the scheduled completion date with the requested completion date for each selected item orders; deriving a customer service measurement for each selected item order based on said comparing, the customer service measurement comprising a measurement of at least one of money and a combination of time and money; wherein customer service measurement includes the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order; identifying a subset of item orders having a customer service measurement that indicates delay; performing at least one material limitation inquiry on the subset of item orders to identify a cause of the customer service measurement indicating delay; determining and reporting an overall customer service measurement based on the customer service measurement for each item order; displaying the customer service measurement on a calendar showing the total customer service measurement for a predetermined time period; repeating said receiving, scheduling, selecting, comparing, deriving, and determining for different schedules to determine the customer service impact of schedule changes

Chapman (U.S. 5,128,860) discloses generating a demand array of item orders; generating a supply array of manufacturing inventory; selecting an item order in the demand array; matching manufacturing inventory in the supply array with the selected item order; and comparing the scheduled completion date of an item in the supply array with the requested completion date for the matched item in the demand array.

Kleinfeld (*Engineering Economics*) discloses the calculation of a value based on the time differences multiplied by the value of the line item order and multiplied by a predetermined interest rate.

Lee at al., *Managing Supply Chain Inventory: Pitfalls and Opportunities,* Sloan Management Review, Vol. 33, No. 3, Spring 1992, pg. 65–73 discloses pitfalls of supply chain inventory management and their symptoms, including inadequate definition of customer service, including measures for lateness.

Schneidermann, *Metrics for the Order Fulfillment Process (Part 2)*, Journal of Cost Management, Vol. 10, No. 3, Fall 1996, pg. C1-C12 discloses a variety of order fulfillment metrics including delay-based subprocess metrics.

However, neither Powell, Chapmen, Kleinfield, Lee, or Schneidermann, singularly or in combination, teach or fairly suggest,

A computer program product comprising a computer readable medium having computer-executable instructions thereon that, when executed by a computer, perform a method for quantitatively determining customer service impact of scheduling changes, the method comprising:

displaying a group of customer service measurements comprising days late, value late, and value-days late, wherein

days late is determined by the amount of time difference between the requested completion date and a scheduled completion date multiplied by the value of the item order and multiplied by a predetermined interest rate;

value late is a value of a late item order determined by multiplying a number of late item orders by a unit price per item order, then subtracting any commission and discount; and

value-days late is a value-time late determined by multiplying a time difference between the requested completion date and the scheduled completion date multiplied by a value of the item order;

selecting a customer service measurement from the group of customer service measurements; and

deriving a customer service impact for each selected item order based on said comparing and the selected customer service measurement;

Nor does the remaining prior art of record remedy the deficiencies found in Powell, Chapmen, Kleinfield, Lee, and Schneidermann. Furthermore, neither the prior art, the nature of the problem, nor knowledge of a person having ordinary skill in the art provides for any predictable or reasonable rationale to combine prior art teachings.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JUSTIN M. PATS whose telephone number is (571)270-1363. The examiner can normally be reached on Monday through Friday, 8:00am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Beth Boswell can be reached on 571-272-6737. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Justin M Pats/
Examiner, Art Unit 3623

/Beth V. Boswell/
Supervisory Patent Examiner, Art Unit 3623